462 [503] [226] Besides the work in rice-fields, women dug and cleaned canals and ditches, mounded land, and fished in many ways, the most laborious of which was plunging a heavy basket into the mud to catch burrowing fish. In the household chores, in which men shared to some extent, they carried water, cut and fetched wood, tended livestock, cultivated kitchen gardens, [501] pounded rice in mortars, and cleaned houses. Boats were rowed by paddling or sculled by standing and pushing a single large [354] oar. Cooking was time consuming. The low stoves were on the ground or floor. Since there were no tables or chairs, one [352] squatted two to four hours a day to cut or pound ingredients, [516] stir the curry, or wash the dishes.

868 561 461 The training of boys and girls for farm and household work was thorough and started early. By 18 years of age, boys and girls with few exceptions were experienced in every step of farming. Janlekha's chart (1955:82) indicates the progression (parenthetical additions are the present author's):

Age	Method	Kinds of farm work
5 - 7	not forced, but allowed or induced to work if they want to	light hauling, removal of weeds which have been turned over by harrowing
8 - 12	mild pressure	light hauling, removal of weeds which have been turned over by harrowing; some household work and help in the kitchen - girls only - (sometimes boys)
13 - 14	moderate pressure	hauling, weeding, buffalo-tending, transplanting, chicken-feeding, fishing, household work (boys and girls)
15 - 16	high pressure	all kinds of farm work, harrowing, harvesting, and uprooting - boys only - are started at this age.

872 461 Children worked in the fields before and after school which, compulsory for all children aged eight to fourteen, was held from 9 a.m. to 3 p.m. five and one-half days a week. Vacations coincided with peak work seasons so children could help in the fields or at home.

364 garbage was customarily fed to animals. As previously reported (Hauck, 1956) "Each family seemed to have its own pattern for disposal of garbage which was not fed to stock. Those who threw it in the canal, did so consistently, except when the nearby canal was dry, and those who threw garbage elsewhere, did this consistently. No one was observed to burn or bury garbage."

The Kitchen Area

• 354 In the larger houses, the kitchen was usually a small separate room with a wooden floor and at least one window for ventilation. A low table or wooden case with sides built up several inches, and filled with clay, served as the "fireplace." On this stood the clay stove, and hot pans and pots were set there when removed from the fire. In homes with an earthen floor, the fireplace might be built directly on the ground. The clay stove was several inches high, shaped so that rice pots and curved frying pans would fit into the large segment of a circle which was its top. An open space was left in front to facilitate building and maintaining the fire. Firewood was kept nearby. Most families also had a portable clay stove in which charcoal was burned. This might be used as an auxiliary unit, for outdoor cooking on a hot day or when traveling by boat.

Matches, although available, were hard to protect from dampness. Kerosene filled cigarette lighters of a cheap and efficient type were commonly used. As kindling, one might use coconut husks or purchase resinous bits of wood that would hold a flame for sometime.

Although only a small amount of firewood was needed, as it was used for cooking only, local supplies were inadequate. In all seasons, some was brought in from other areas. One family participating in the survey planted trees each year for firewood. The wife in another household used to return to her parents' home to gather a boatload of wood as needed. Because charcoal was more expensive than wood, and none was produced in the village, it was used for home cooking by only about 10 per cent of the village families, primarily those such as storekeepers and venders who did not have time to cut firewood.

352 In many kitchens clean dishes were placed upside down on
251 a slatted wooden rack. The other common item of furniture was a free standing ventilated cupboard or food safe. At its best, this was screened, and the legs antproofed in some way, as by putting them into small containers partially filled with kerosene, or rubbing them with powdered pitch; but relatively few
251 village families had such well constructed food safes. Families that did not own a food safe often kept leftover cooked foods in a basket, or covered with large dishes on a tray. Fish and sugar must be kept away from ants, but cooked rice,

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862 511 expenditures by food groups is shown for the 11 families that participated in the dietary study.

Consumption of canned foods was negligible. Some canned fish and fruits were on sale at stores in the village, in 1952-54, but were seldom seen in homes.

262 272 854 855 Sweetened condensed milk, which was served in coffee sold at the stores, was occasionally bought for the children. On one occasion, a woman was seen buying milk diluted with hot water as a beverage. Among 526 records of food eaten by school children during 24 hour periods, milk appeared twice only, once with coffee. Dried milk, for infant feeding, was used occasionally. During 1952-54, several instances were noted in which dried milk, mixed with water, was used to feed an infant while the mother was at work in the field or engaged in vending, but we encountered one case only of an infant who was not breast fed. This was an infant whose mother died when he was five days old, and who was reared by grandparents.

262 443 [277] Relatively few items of food were available at the village stores. In the inventory of the largest of the three stores in the village in 1948-49 (Sharp et al., 1953, pp. 211-212) the following items of food were listed: big dried chilies, shrimp paste, onion, garlic, fish sauce (fishsoy), salted fish, fresh chilies, limes, coconut, coconut oil[1], brown (palm) sugar, tea, coffee, condensed milk, orangeade and lemonade (carbonated), sweets, liquor, ingredients (including a lime paste) used together in betel chewing.[2]

New stock received in December by a local vendor who kept a few items for sale at her house included mature green beans, black beans, peanuts, sweet potatoes, salted turnip, pickled garlic and tomato sauce.

272 443 515 Larger stores served as informal men's clubs where tea, coffee with condensed milk, and carbonated beverages were sold primarily for consumption on the premises. The proprietor of a new store, built in December 1952, sold no liquor.

273 [443] We have no estimate of the amount of liquor sold in Bang Chan, although for those who drank it, its caloric value might be of significance.[3] About 9% of the householders interviewed

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[354] 1. Listed by Sharp et al. with non-food items, as much of it was burned in lamps.

2. Included here as food since some calcium may be obtained from this source.

3. One observer estimated the intake of certain village men who drank regularly as at least 2 oz. of rice liquor (28-35% alcohol) per day, representing about 100 calories. The estimated intake of women who drank regularly was about 1 oz. per day.

271 contaminated drinking water, but the traditional use of boiled water for newborn infants and their mothers, and its occasional use for sick persons, might provide the starting point for a desirable change.

Meal Preparation and Service

Processes and Equipment

252 The principal processes involved in food preparation for which equipment was required are: cutting solid food into bite-size pieces, pounding spices and flavoring materials, grating coconut, straining, boiling, sauteing in a small amount of fat, steaming, and roasting on a stick or metal support over the fire. Although foods were steamed or roasted only occasionally, the processes were familiar to all.

354 The Thai kitchen had no oven. When the term "baked" was used, it might mean cooking with dry heat on a rack over the fire (as banana baked in the skin) or without fat in the frying pan (as small dried fish toasted in this way).

128 415 Equipment used during meal preparation by the 11 families observed on 44 survey days is listed in Appendix A, p. 96, that used in serving and eating food, on p. 96.

252 415 554 184 The type of food preparation and service was much the same in the relatively well-to-do and the poorer households in Bang Chan. The chief difference in equipment for food preparation and service in families of different economic status was in the number of items of one kind which were owned. Thus a poor family might own one knife and one clay water jar, whereas an affluent family would probably own several knives and a number of water jars. Equipment used on special occasions, as in preparation of food for large numbers of people, was owned by well-to-do families only. Some had enough equipment for large cooperative work parties.

Persons Responsible for Food Preparation

252 462 Food was usually prepared by the homemaker and/or older daughter, if one were at home, but all members of the family who were old enough to help, had some knowledge of food preparation and did prepare food as the occasion demanded. While preparing, cooking and serving food were more frequently carried out by women than by men, adults and school-age children of both sexes had some competence in this area. While certain activities are normally assigned to men and others to women, the Thai maintain no rigid compartmentalization and are unembarrassed when a woman does a man's job or a man does

and conditions. An improved stove[1], by making more efficient use of fuel, would reduce one obstacle to boiling drinking water. The alternative, chemical treatment, might be regarded as "medicine," and people might be more willing to spend money for this than for firewood. Water supply and latrine facilities at the school and wat should be such as to set a good example. Since links between sanitation and health have not been established in the minds of the villagers, no proposed solutions are apt to be effective without a strenuous and continued educational campaign.

Since the nutrient content of many foods used in Bang Chan has not been ascertained, the responsible Thai government personnel should as soon as possible seek to analyze those more commonly used, in particular fish, fermented fish, shrimp paste, fish paste and fishsoy, both commercial and home-made products, edible green leaves and flowers. Discovery, among the many varieties of fish used, of some which are good sources of vitamin A, would be particularly useful. Of the calculated vitamin A values in diets for the two groups of households studied 90% or more of the vitamin A value was from vegetable sources, therefore in the precursor form. Among foods of animal origin which were used, eggs were the only food known to contain appreciable amounts of vitamin A. With more, and more complete, analyses of Thai foods, some of unusual nutritive value would probably be discovered. Also, information on composition of coconut milk should permit reasonably accurate calculation if the weight of coconut meat and the resulting product are known. Use of figures now available in food value tables, for coconut milks as prepared in Bang Chan, would lead to gross overestimate of caloric value and fat content of diets.

In using present knowledge to improve nutrient intake, emphasis should be placed on changes which would improve the everyday diet for all members of the family. We would start with familiar foods and methods of preparation, stressing the types of food which should be produced and used in increasing amounts. Advice of specialists in agriculture at nearby Kasetsart University should be sought in making choices appropriate to the location, among vegetables which would enhance the nutrient content of the diet, particularly in vitamin A value and riboflavin. Since garden area is often limited, vine vegetables which can be trellised may be useful. In introducing innovations, we would, if possible, build on procedures known to be acceptable to some respected persons in the community.

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1. The "Hyderabad Smokeless Chula" would be useful in Bang Chan. In Smokeless Kitchens for the Millions, S. P. Raju (1953) includes designs for models with one to three cooking holes and hot water pot (The Christian Literature Society, P. O. Box 501, Park Town, Madras, India).

APPENDIX A

Description of the Kitchen and Some Notes on Food Preparation in a Relatively Prosperous Household[1]

Friday, May 22, 1953

Arrived at 5:15 a.m. When we reached the house, the mother was holding the dog. The house was dark, and we walked around sleeping babies and children. . . . . The 15 year old niece who prepares meals here, was already at work. For light she had an oil lamp, a tin of about 1 pt. capacity, with wick. The rice was already measured, but she waited until SS could weigh it, before putting it on to cook. SS used her flashlight to see the scale and her notebook.

The kitchen here has a thatched roof, well smoked, but the walls and "windows" are of woven split bamboo. A sliding wooden "window" can be pushed back to allow access to a broad shelf outside. Here a large pan of pond water is kept, so that dishes may be rinsed and hands rinsed after each operation. Dishes are stacked upside down, on a wooden rack nearby, to dry.

The stove area in the corner has place for one fire, but several places for pots to stand. Downstairs, under the shed near the fish pond, is a larger clay stove, where the niece cooks the rice in the morning (enough for noon as well) and some other items; for example the (3)khii-(2)leg leaves which were cooked last night for use in sour curry this a.m. This probably keeps the kitchen cooler than it would otherwise be. Waste, fish bones, vegetable parings, etc., which are to be given to the chickens, can be thrown below through the space between two floor levels (kitchen and main rooms).

Rice water, coconut water, and food left in the serving bowls when the meal is over, are given to the dogs. A bowl is kept below, near where rice is drained, for dog food. Food left in pots is kept for humans to eat.

Fish caught in the pond are kept alive in pond water, in a water jar. When a fish is wanted, the niece catches one from the jar, stuns it with the back of her knife, and scales and cleans it on a split log nearby (rounded side of log up). The fish is put into a small basket, and the niece

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1. In reproducing these notes, slight changes have been made such as substitution of descriptive terms for personal names which appeared in the original.

117 252 takes it down the steps to the fish pond, where she swishes the basket around to wash the fish, and rinses her hands at the same time.

[234] There are some hazards to the food--chickens trying to get at the edible part of fish while the niece cleans it (she leaves the scales, etc. for them to eat); cat and kittens in the kitchen, having to be driven away from the grated coconut and coconut milk, and getting an occasional unweighed nip. Whether we start to weigh food for the evening meal or a.m. meal, some cooked foods are apt to be used, either left over [262] [126] from a previous meal, or cooked in advance. This a.m., for example, buffalo meat, already cooked (but not weighed before cooking) was used, and (3)khii-(2)leg leaves, which SS weighed last night. These latter were cooked last night, to reduce bitterness, then put into curry today.

Description of Food Preparation Area in a Relatively Poor Household

Wednesday, May 27, 1953

117 [262] Arrived about 5:45 a.m. While other food was being prepared, the 11-year old son came in with a package of salted white radish and a small milk tin with some coconut oil which had just been bought. This is the house which we found flooded when they sent for us to see the baby last fall. The roof seems to be well thatched. The floor is not wet after last [352] night's downpour. The bed platform, in one corner, is about [353] 8 x 10 feet. The baby's cradle hangs above it. In the oppo- [352] site corner is a shelf where utensils are kept. Some food, [126] in paper bags, is in a basket hung from the roof. Fresh fish [359] is kept in a jar of water until needed. The stove is on a small mound of earth, and further elevated on a small box (just big enough for the stove) filled with earth.

[353] We sit on a mat, spread on the mud floor, with the scales, plastic bowls and waxed paper ready for weighing food. [355] The children lie on a mat nearby. In the house is a fresh mound of earth, a small straw bin with rice, and various pieces of equipment.

262 435 796 [875] Food for Homage-to-the-Teacher Rite (cont.)

Item	Amount	Cost in Baht
Fruit:		
Bananas ((3)kluaj (4)nam-(4)waa)	5 bun.	from father
Chico[2]		5.
Coconut	150	180.
Coconut (young, to make dessert)	30	30.
Job's tears	1 lit.	3.
Plums, yellow[2]		5.
Pomelos[2]		6.
Rose apples[2]		2.
Tamarind		7.50
Tomato sauce		8.
Young palm fruit[4]	7 bun.	3.
Vegetables (non leafy):		
Bamboo shoots, cooked	1 pail	28.
[272] Cucumber		--3
[273] Egg plants		--3
[276] Garlic	5 kg.	26.50
Gourd, white		1.
Onion, fragrant[5]		6.
Onion[5]	4 kg.	4.
Onion, welsh[5]		--3
Mushrooms		3.
Radish, white		--3
[354] **Vegetables (leafy green and yellow):**		
Cabbages		--3
Chinese kale		--3
Chili, green		7.50
Vegetables (leafy green & yellow) cont.:		
Lettuce		--3
Parsley		--3
Pumpkin	3 fruits	12.
Sweet basil leaves		1.
Sweet potatoes	6 kg.	6.
(3)Tang-(5)oo		--3
Seasonings etc.:		
Vinegar	1 bottle	1.
Fishsoy	1 jar	10.
(2)Ka-(1)chaaj	2½ kg.	12.50
Sodium glutamate		5.
Pepper		14.
Agar	400 gms.	36.
Miscellaneous:		
Cola beverage	72 bottles	72.6
Liquor	16 bottles	80.6
Ice		30.6
Cigarettes	2 pkgs.	-- 6
Tobacco	1 heap	-- 6
Betel pepper		9.
Fresh areca nut		10.
Dried areca nut		8.
Dried palm leaves	1 big bundle	2.
Firewood		50.
	Total	1577.75

[184]

1. For Moslem guests.
2. Food items placed on a tray and used in the ceremony proper.
3. Items so marked cost a total of 140 baht.
4. Not identified.
5. Several kinds of onions, both fresh and dried, are commonly used.
6. Prices not stated; estimate for liquor.

7: Janlekha X-4,5 (1948-1953)p956 AO7 Central Thai AO7
Bangchan

The Family

592 Although the family is the smallest of social institutions, it occupies first rank in importance. For the purpose of this study family is defined as a group of persons who form a household under one head including parents, children, servants and other dependents. It is a social unit [264] for both consumption and production. In Bangchan, members [464] of the same family, with the possible exception of piece- [463] workers who have the privilege of eating with their employers only during periods of certain kinds of work, usually share the same meal although not necessarily at the same time. Physically able members are expected to contribute to family work although some may also do extra jobs for their own pocket money. In all cases family work has priority over the extra job, and in most cases members turn over all or part of the [354] earning thus realized to the family head. Although most [184] families have separate dwellings, there are instances of two families sharing the same dwelling but having separate cook- [464] ing arrangement. Such cases are rare, however. According [463] to our operational definition, then, a member of a biological family who has hired himself out as regularly hired laborer ceases to be a member of his own biological family and becomes a member of his employer's family. Piece workers, on the other hand, although they may occasionally eat with their employers, still retain membership of their biological family if they still live with them. Finally, people who live in the same dwelling may not belong to the same family if they